

ABSTRACT

Self-aligned trench MOSFETs and methods for manufacturing the same are disclosed. By having a self-aligned structure, the number of MOSFETS per unit area—the cell density—is increased, making the MOSFETs cheaper to produce. The self-aligned structure for the MOSFET is provided by making the sidewall of the overlying isolation dielectric layer substantially aligned with the sidewall of the gate conductor. Such an alignment can be made through any number of methods such as using a dual dielectric process, using a selective dielectric oxidation process, using a selective dielectric deposition process, or a spin-on-glass dielectric process.

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